ence of radial muscle fibres other than those in the walls of the vessels, and in (2) the interpretation of the nature of the cells forming the posterior layers of the iris. These cells—*i. e.*, the anterior layer of retinal pigment epithelium—act as a dilator muscle. On bleaching and staining they resemble in all respects unstriped muscular fibres. Evidence also exists to show that the sphincter pupillæ is likewise derived from the retinal epiblast. These muscles would therefore resemble the arrectores pilorum of the skin in being formed from epiblast. The physiological evidence in favor of a distinct dilator is stronger than the histological, being indeed quite conclusive. The sphincter is innervated by the third cranial nerve, the pupil constrictor fibres originating in the third nucleus in the floor of the aqueduct of Sylvius, passing out of the mesencephalon in the third nerve as far as the orbit. The fibres here pass into the branch which supplies the inferior oblique, leaving it by the short root of the ciliary ganglion. From the ciliary ganglion they pass by the short ciliary nerves to the eye, piercing the sclera around the optic nerve, and thence forward in the choroid and ciliary body to the iris.

The dilator pupillæ are supplied by the cervical sympathetic nerve. The dilator tract probably commences in the neighborhood of the third nucleus in the mesencephalon, passing through the medulla oblongata, where its exact path is still unknown, into the lateral columns of the cord. The fibres leave the cord by the ventral routes of the first three thoracic nerves (cat, dog, ape), enter the rami communicantes, and run to the first thoracic or stellate ganglion. From here they mostly pass into the anterior limb of the annulus of Vieussens, though some run in the posterior limb. They pass up the neck in the cervical sympathetic to the superior cervical ganglion. From here the dilator tract enters the skull by the cervico-Gasserian strand, running independently of the carotid plexus. It joins the Gasserian ganglion and passes thence into the first or ophthalmic division of the fifth nerve, following the nasal branch, which it leaves finally to enter the long ciliary nerves, thus avoiding the ciliary ganglion. The long ciliary nerves enter the eye on each side of the optic nerve, and, running forward between the choroid and sclerotic, pass through the ciliary body to be distributed to the iris.

Constriction and dilatation of the iris are brought about respectively by three factors which are effectual in diminishing degree in the following order: Constriction—(1) contraction of the sphincter muscle; (2) relaxation of the dilator muscle; (3) dilatation of the bloodvessels. Dilatation—(1) contraction of the dilator muscle; (2) relaxation of the sphincter; (3) constriction of the bloodvessels.

Opaque Nerve Fibres.—HAWTHORNE (*The Ophthalmoscope*, September, 1904) figures two unusual instances of this condition. The first shows the extension of such fibres over an enormous area of the fundus, not only embracing the nerve in a complete circle about three disk diameters in extent, but also extending outward beyond the macula to a considerable distance, constituting in fact "by far the most conspicuous feature in the ophthalmoscopic picture." The disk itself, except for a small part of the lower and outer quadrant, was not involved. Another unusual feature was the absence of the lustrous appearance. The macular portion had, on the contrary, a dead-white character and some irregularity of the surface. The eye appeared normal in other respects, but was totally blind without even perception of light, though it was not divergent and there was no nystagmus.

[Liebreich figures a very similar case in his atlas.—ED.]

In the author's second case an upward patch of about the usual size was completely separated from the disk by a clear interval of normal fundus, rather less than one-half disk diameter in width. This eye was healthy and had normal vision.

An Attempt to Estimate the Risk of Producing Sympathetic Ophthalmitis by Perforating Injury.—BARRETT, England (*Intercolonial Medical Journal of Australasia*, January 20, 1904), after reviewing briefly some well-known figures bearing upon sympathetic ophthalmitis, concludes that the "risk of sympathetic ophthalmitis supervening in a case of a severe injury with iridocyclitis is certainly not less than 5 per cent. It is probably considerably more." He feels, after attempting to assess the value of these facts, more inclined than ever to emphasize the rule gradually formulated in practice that in general, and apart from exceptional circumstances, a hopelessly blind eye, which has been perforated at any time, should be excised.

The Subconjunctival Injection of Cocaine in Cataract and Other Operations.—KOLLER, the discoverer of the anæsthetic properties of cocaine, remarks, in a paper read in the Section of Ophthalmology of the British Medical Association, which met at Oxford, July, 1904 (*The Ophthalmoscope*, September, 1904), that while cocaine was satisfactory in operations upon the superficial structures of the eyeball, it was disappointing in operations on the iris. To anæsthetize this membrane also, he practices, after a preliminary instillation of a mixture of cocaine and pilocarpine into the conjunctival sac, a subconjunctival injection —two to three drops—of a 5 per cent. solution at a point where the fixation forceps is to be applied. The injection must be subconjunctival, and not into the episclera, otherwise a troublesome œdema will occur which obscures the section.

A Case of Foreign Body Remaining in the Lens of the Eye for Six Years with the Lens Otherwise Clear.—LEWIS (*Medical Record*, August 6, 1904) reports a case of a young man whose lens has contained a foreign body for the past seven years, with retention of full vision and full functional activity of the eye. The foreign body entered the lens through a small wound at the lower nasal part of the cornea. It can be seen in the lens as a dark, glistening particle, a little to the supratemporal side and slightly posterior to the equator. It was thought to be a piece of steel, irregular in shape and about 2 mm. in its largest diameter, a chip from using a chisel on a piece of steel. There was almost no reaction and the wound healed promptly. There were two attacks of what seemed to be conjunctivitis during the four months following the injury. There were no further ocular symptoms, and the lens has remained clear.